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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,768	10/22/2003	Jacques Baudonnel	1759.140	5370

23405 7590 08/21/2006

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EXAMINER

PIZIALI, ANDREW T

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/690,768

Applicant(s)

BAUDONNEL, JACQUES

Examiner

Andrew T. Piziali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 7/5/2006 has been entered. The examiner has withdrawn the objection of claim 1 based on the amendment to claim 1. Applicant's amendment necessitated the new grounds of rejection presented in this Office action.

Claim Objections

2. Claim 8 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form. Claim 1 already establishes that the thermoplastic films avoid penetrating into the ply of high-tenacity yarns.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 2, 6, 7 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

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Regarding claims 2, 6 and 7, the specification is silent regarding a tape system wherein each thermoplastic film adheres to a respective different side of the ply while the film(s) avoid penetrating the ply. The current specification teaches that penetration (lack of freedom) is avoided when a film is not adhered to the ply (page 5, lines 9-19).

Regarding claim 12, the specification is silent regarding a tape system wherein the ply of yarns contacts each thermoplastic film while the film(s) avoid penetrating the ply. The current specification teaches that contact is achieved upon adhesion (penetration) (page 5, lines 9-19 and page 9, lines 7-10).

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-9 and 11-12, it is not clear if the "said film layer" in the last line of claim 1 is referring to the one of the two film layers or both of the film layers.

Regarding claim 10, it is not clear if the "said film layer" in the last line of claim 10 is referring to the one of the two film layers or both of the film layers.

Regarding claim 11, the applicant claims that structure comprises "at least one pipe of a plurality of pipes." It is not clear if the structure can have just one pipe or if it must have a plurality of pipes.

Claim Rejections - 35 USC § 102/103

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3 and 6-13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over USPN 6,228,312 to Boyce.

Regarding claims 1-3 and 6-13, Boyce discloses a reinforcing tape system comprising a reinforcing tape including a ply of longitudinal glass-based high-tenacity yarns bound together by weft yarns which tape includes two thermoplastic films each placed on a respective different side of the ply of high-tenacity yarns wherein the tape is flexible and the yarns provide reinforcement (see entire document including column 4, lines 27-45, column 5, line 46 through column 6, line 3, and column 6, lines 64-66). Boyce specifically discloses that the structure may be in the form of a tape (column 6, lines 35-40 and 64-66). Boyce specifically discloses that yarns may be glass-based (column 4, lines 27-45). Boyce specifically discloses that the yarns may be in a woven structure (warp yarns bound by weft yarns) (column 4, lines 27-36). Boyce specifically discloses that the tape may include two thermoplastic films placed on respective different sides of the ply of yarns (column 6, lines 1-3). Boyce specifically discloses that the

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tape is flexible (column 6, lines 4-9) and that the yarns provide reinforcement (column 4, lines 37-64). Boyce specifically discloses that the tape may be used as an external pipe cover (column 3, lines 1-6), therefore, Boyce discloses that the tape is flexible and may be wound around an outside surface of a structure to be reinforced, the tape conforming to a shape of the outside surface of the structure to be reinforced wherein the ply of yarns would reinforce the structure and remain flexible in response to the tape being wound around the structure. Boyce discloses that the thermoplastic films avoid penetrating into the ply of yarns (Figures 5 and 6).

In the event that it is shown that Boyce does not disclose winding the tape on the outside of a structure with sufficient specificity, it would have been obvious to one having ordinary skill in the art at the time the invention was made to wind the tape around a structure, as taught by Boyce, to provide the structure with a reinforcing cover.

Regarding claims 2 and 6-7, Boyce discloses that the tape can be heated and calendered (column 6, lines 64-66), which would result in the thermoplastic films adhering to a respective side of the ply.

Regarding claim 3, Boyce discloses that the two thermoplastic films may be bonded together along the edges of the tape (column 7, lines 4-5).

Regarding claims 6-7, Boyce discloses that the longitudinal yarns may be bound together by at least partly thermoplastic weft yarns (column 4, lines 27-45).

Regarding claim 7, Boyce discloses that the thermoplastic material of the weft yarns and material of the films are similar (column 5, lines 46-67).

Regarding claims 9 and 13, Boyce discloses that two tapes may be overlapped (column 6, line 64 through column 7, line 13).

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Regarding claim 11, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Considering that Boyce discloses that the pipe may be an iron pipe (column 6, lines 28-34), it appears that the prior art structure is capable of performing the intended use.

Regarding claim 12, Boyce discloses that the ply of yarns contacts each of the films (see Figures 5 and 6).

Claim Rejections - 35 USC § 103

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,228,312 to Boyce as applied to claims 1-3 and 6-13 above, and further in view of USPN 4,578,293 to Lusk.

Boyce does not specifically mention a UV blocking agent, but Lusk discloses that in the thermoplastic pipe and liner art a UV stabilizer is conventionally added to the thermoplastic to increase the service life of the article (see entire document including column 1, lines 6-18). It would have been obvious to one having ordinary skill in the art at the time the invention was made to add a UV stabilizer to the thermoplastic films of Boyce, because the UV stabilizer would increase the service life of the article.

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11. Claims 1, 3, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 5,014,755 to Bompard et al. (hereinafter referred to as Bompard).

Regarding claims 1, 3, 8 and 10, Gilbert discloses a reinforcing tape system comprising a reinforcing tape including a ply of reinforcement yarns which tape includes two thermoplastic films each placed on a respective different side of the ply of reinforcement yarns (see entire document including column 2, lines 24-50 and column 4, lines 13-53). Gilbert discloses that the tape is flexible enough to be wound on a roll (column 2, lines 60-65) and that the yarns provide reinforcement (column 2, lines 39-65). Gilbert discloses that the tape may be wound on a roll (column 2, lines 60-65), therefore, Gilbert discloses that the tape is flexible and may be wound around an outside surface of a structure (roll) to be reinforced, the tape conforming to a shape of the outside surface of the structure to be reinforced wherein the ply of yarns would reinforce the structure and remain flexible in response to the tape being wound around the structure.

Gilbert discloses that the reinforcement material may be any desired material that provides the desired tensile strength (column 4, lines 3-23), but Gilbert does not specifically mention a woven reinforcement material. Bompard discloses that it is known in the thermoplastic reinforced laminate art that a woven reinforcement material comprising carbon-, glass- or aramid-based fibers may be used to form a reinforcement layer with improved mechanical properties (see entire document including column 1, lines 50-61 and column 3, lines 1-19). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the reinforcement material from any suitable known reinforcement material and structure, such as a woven reinforcement material comprising glass-, carbon- or

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aramid-based fibers, as taught by Bompard, because the reinforcement material exhibits improved mechanical properties and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

Regarding claim 3, Gilbert discloses that the two thermoplastic films are bonded together along the edges of the tape (column 2, lines 24-38).

Regarding claim 8, Gilbert discloses that the thermoplastic films are separate from the yarns and avoid penetrating into the ply of high-tenacity yarns (Figure 2).

12. Claims 2 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 5,014,755 to Bompard as applied to claims 1, 3, 8 and 10 above, and further in view of USPN 5,547,536 to Park.

Regarding claims 2 and 6-7, Gilbert discloses that the thermoplastic films may be laid down by a number of processes (column 6, lines 9-27), but Gilbert does not specifically mention bonding the edges of the thermoplastic films such that each thermoplastic film adheres to a respective different side of the ply. Park discloses that two thermoplastic films may be adhered together by applying heat and pressure to both films (see entire document including Figures 1 and 3 and column 4, lines 10-25). It would have been obvious to one having ordinary skill in the art at the time the invention was made to adhere the thermoplastic films by any suitable method, such as by applying heat and pressure to both films, as taught by Park, because it is within the general skill of a worker in the art to select a known method on the basis of its suitability.

Regarding claim 6, Bompard discloses that the longitudinal yarns may be bound by at least partly thermoplastic weft yarns (see the paragraph bridging columns 4 and 5).

Regarding claim 7, Gilbert discloses that similar materials may be used in the reinforcement fiber layer and the thermoplastic films (column 4, lines 13-53).

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 5,014,755 to Bompard as applied to claims 1, 3, 8 and 10 above, and further in view of USPN 3,830,067 to Osborn et al. (hereinafter referred to as Osborn).

Gilbert discloses that the thermoplastic films may be laid down by a number of processes (column 6, lines 9-27), but Gilbert does not specifically mention bonding the edges of the thermoplastic films such that the reinforcing material is capable of sliding inside the sheath formed by the thermoplastic films. Osborn discloses that edges of two thermoplastic films may be sealed by passing the edges between heated rollers or by using a suitable solvent that softens the edges to permit bonding (see entire document including column 5, lines 46-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to seal the edges by any suitable method, such as by passing the edges between heated rollers or by using a suitable solvent that softens the edges to permit bonding, as taught by Osborn, because it is within the general skill of a worker in the art to select a known method on the basis of its suitability.

14. Claims 1, 3, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 4,988,236 to Ramsey et al. (hereinafter referred to as Ramsey) in view of USPN 5,014,755 to Bompard.

Regarding claims 1, 3, 8 and 10, Gilbert discloses a reinforcing tape system comprising a reinforcing tape including a ply of reinforcement yarns which tape includes two thermoplastic films each placed on a respective different side of the ply of reinforcement yarns (see entire

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document including column 2, lines 24-50 and column 4, lines 13-53). Gilbert discloses that the tape is flexible enough to be wound on a roll (column 2, lines 60-65) and that the yarns provide reinforcement (column 2, lines 39-65). Gilbert discloses that the tape may be wound on a roll (column 2, lines 60-65), therefore, Gilbert discloses that the tape is flexible and may be wound around an outside surface of a structure (roll) to be reinforced, the tape conforming to a shape of the outside surface of the structure to be reinforced wherein the ply of yarns would reinforce the structure and remain flexible in response to the tape being wound around the structure.

Gilbert discloses that the detectable tape may be laid directly on a pipe (column 3, lines 40-41), but Gilbert does not appear to specifically mention wrapping a pipe with the tape.

Ramsey discloses that it is known in the detectable tape art to wrap a detectable tape around a pipe (see entire document including column 2, lines 17-34). It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the tape to a pipe in any suitable configuration to allow for detection, such as by wrapping the tape around a pipe, as disclosed by Ramsey, because it is within the general skill of a worker in the art to select a known method of applying detectable tape to a pipe on the basis of its suitability and desired characteristics.

Gilbert discloses that the reinforcement material may be any desired material that provides the desired tensile strength (column 4, lines 3-23), but Gilbert does not specifically mention a woven reinforcement material. Bompard discloses that it is known in the thermoplastic reinforced laminate art that a woven reinforcement material comprising carbon-, glass- or aramid-based fibers may be used to form a reinforcement layer with improved mechanical properties (see entire document including column 1, lines 50-61 and column 3, lines

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1-19). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the reinforcement material from any suitable known reinforcement material and structure, such as a woven reinforcement material comprising glass-, carbon- or aramid-based fibers, as taught by Bompard, because the reinforcement material exhibits improved mechanical properties and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

Regarding claim 3, Gilbert discloses that the two thermoplastic films are bonded together along the edges of the tape (column 2, lines 24-38).

Regarding claim 8, Gilbert discloses that the thermoplastic films are separate from the yarns and avoid penetrating into the ply of high-tenacity yarns (Figure 2).

15. Claims 2 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 4,988,236 to Ramsey in view of USPN 5,014,755 to Bompard as applied to claims 1, 3, 8 and 10 above, and further in view of USPN 5,547,536 to Park.

Regarding claims 2 and 6-7, Gilbert discloses that the thermoplastic films may be laid down by a number of processes (column 6, lines 9-27), but Gilbert does not specifically mention bonding the edges of the thermoplastic films such that each thermoplastic film adheres to a respective different side of the ply. Park discloses that two thermoplastic films may be adhered together by applying heat and pressure to both films (see entire document including Figures 1 and 3 and column 4, lines 10-25). It would have been obvious to one having ordinary skill in the art at the time the invention was made to adhere the thermoplastic films by any suitable method,

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such as by applying heat and pressure to both films, as taught by Park, because it is within the general skill of a worker in the art to select a known method on the basis of its suitability.

Regarding claim 6, Bompard discloses that the longitudinal yarns may be bound by at least partly thermoplastic weft yarns (see the paragraph bridging columns 4 and 5).

Regarding claim 7, Gilbert discloses that similar materials may be used in the reinforcement fiber layer and the thermoplastic films (column 4, lines 13-53).

16. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 4,988,236 to Ramsey in view of USPN 5,014,755 to Bompard as applied to claims 1, 3, 8 and 10 above, and further in view of USPN 3,830,067 to Osborn.

Gilbert discloses that the thermoplastic films may be laid down by a number of processes (column 6, lines 9-27), but Gilbert does not specifically mention bonding the edges of the thermoplastic films such that the reinforcing material is capable of sliding inside the sheath formed by the thermoplastic films. Osborn discloses that edges of two thermoplastic films may be sealed by passing the edges between heated rollers or by using a suitable solvent that softens the edges to permit bonding (see entire document including column 5, lines 46-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to seal the edges by any suitable method, such as by passing the edges between heated rollers or by using a suitable solvent that softens the edges to permit bonding, as taught by Osborn, because it is within the general skill of a worker in the art to select a known method on the basis of its suitability.

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17. Claims 1, 3, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 6,702,518 to Harris.

Regarding claims 1, 3, 8 and 10, Gilbert discloses a reinforcing tape system comprising a reinforcing tape including a ply of reinforcement yarns which tape includes two thermoplastic films each placed on a respective different side of the ply of reinforcement yarns (see entire document including column 2, lines 24-50 and column 4, lines 13-53). Gilbert discloses that the tape is flexible enough to be wound on a roll (column 2, lines 60-65) and that the yarns provide reinforcement (column 2, lines 39-65). Gilbert discloses that the tape may be wound on a roll (column 2, lines 60-65), therefore, Gilbert discloses that the tape is flexible and may be wound around an outside surface of a structure (roll) to be reinforced, the tape conforming to a shape of the outside surface of the structure to be reinforced wherein the ply of yarns would reinforce the structure and remain flexible in response to the tape being wound around the structure.

Gilbert discloses that the reinforcement material may be any desired material that provides the desired tensile strength, including a nonwoven fabric (column 4, lines 3-23), but Gilbert does not specifically mention a woven reinforcement material. Harris discloses that it is known in the underground pipe detection art to use woven or nonwoven fabric as a reinforcement material (see entire document including column 2, lines 33-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the reinforcement material in any suitable known reinforcement configuration, such as a woven or nonwoven reinforcement configuration, as taught by Harris, because it is within the general skill of a worker in the art to select a known fabric construction on the basis of its suitability.

Regarding claim 3, Gilbert discloses that the two thermoplastic films are bonded together along the edges of the tape (column 2, lines 24-38).

Regarding claim 8, Gilbert discloses that the thermoplastic films are separate from the yarns and avoid penetrating into the ply of high-tenacity yarns (Figure 2).

18. Claims 2 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 6,702,518 to Harris as applied to claims 1, 3, 8 and 10 above, and further in view of USPN 5,547,536 to Park.

Regarding claims 2 and 6-7, Gilbert discloses that the thermoplastic films may be laid down by a number of processes (column 6, lines 9-27), but Gilbert does not specifically mention bonding the edges of the thermoplastic films such that each thermoplastic film adheres to a respective different side of the ply. Park discloses that two thermoplastic films may be adhered together by applying heat and pressure to both films (see entire document including Figures 1 and 3 and column 4, lines 10-25). It would have been obvious to one having ordinary skill in the art at the time the invention was made to adhere the thermoplastic films by any suitable method, such as by applying heat and pressure to both films, as taught by Park, because it is within the general skill of a worker in the art to select a known method on the basis of its suitability.

Regarding claims 6 and 7, Gilbert discloses that similar materials may be used in the reinforcement fiber layer and the thermoplastic films (column 4, lines 13-53).

19. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 6,702,518 to Harris as applied to claims 1, 3, 8 and 10 above, and further in view of USPN 3,830,067 to Osborn.

Gilbert discloses that the thermoplastic films may be laid down by a number of processes

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(column 6, lines 9-27), but Gilbert does not specifically mention bonding the edges of the thermoplastic films such that the reinforcing material is capable of sliding inside the sheath formed by the thermoplastic films. Osborn discloses that edges of two thermoplastic films may be sealed by passing the edges between heated rollers or by using a suitable solvent that softens the edges to permit bonding (see entire document including column 5, lines 46-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to seal the edges by any suitable method, such as by passing the edges between heated rollers or by using a suitable solvent that softens the edges to permit bonding, as taught by Osborn, because it is within the general skill of a worker in the art to select a known method on the basis of its suitability.

20. Claims 1, 3, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 4,988,236 to Ramsey in view of USPN 6,702,518 to Harris.

Regarding claims 1, 3, 8 and 10, Gilbert discloses a reinforcing tape system comprising a reinforcing tape including a ply of reinforcement yarns which tape includes two thermoplastic films each placed on a respective different side of the ply of reinforcement yarns (see entire document including column 2, lines 24-50 and column 4, lines 13-53). Gilbert discloses that the tape is flexible enough to be wound on a roll (column 2, lines 60-65) and that the yarns provide reinforcement (column 2, lines 39-65). Gilbert discloses that the tape may be wound on a roll (column 2, lines 60-65), therefore, Gilbert discloses that the tape is flexible and may be wound around an outside surface of a structure (roll) to be reinforced, the tape conforming to a shape of

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the outside surface of the structure to be reinforced wherein the ply of yarns would reinforce the structure and remain flexible in response to the tape being wound around the structure.

Gilbert discloses that the detectable tape may be laid directly on a pipe (column 3, lines 40-41), but Gilbert does not appear to specifically mention wrapping a pipe with the tape.

Ramsey discloses that it is known in the detectable tape art to wrap a detectable tape around a pipe (see entire document including column 2, lines 17-34). It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the tape to a pipe in any suitable configuration to allow for detection, such as by wrapping the tape around a pipe, as disclosed by Ramsey, because it is within the general skill of a worker in the art to select a known method of applying detectable tape to a pipe on the basis of its suitability and desired characteristics.

Gilbert discloses that the reinforcement material may be any desired material that provides the desired tensile strength, including a nonwoven fabric (column 4, lines 3-23), but Gilbert does not specifically mention a woven reinforcement material. Harris discloses that it is known in the underground pipe detection art to use woven or nonwoven fabric as a reinforcement material (see entire document including column 2, lines 33-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the reinforcement material in any suitable known reinforcement configuration, such as a woven or nonwoven reinforcement configuration, as taught by Harris, because it is within the general skill of a worker in the art to select a known fabric construction on the basis of its suitability.

Regarding claim 3, Gilbert discloses that the two thermoplastic films are bonded together along the edges of the tape (column 2, lines 24-38).

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Regarding claim 8, Gilbert discloses that the thermoplastic films are separate from the yarns and avoid penetrating into the ply of high-tenacity yarns (Figure 2).

21. Claims 2 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 4,988,236 to Ramsey in view of USPN 6,702,518 to Harris as applied to claims 1, 3, 8 and 10 above, and further in view of USPN 5,547,536 to Park.

Regarding claims 2 and 6-7, Gilbert discloses that the thermoplastic films may be laid down by a number of processes (column 6, lines 9-27), but Gilbert does not specifically mention bonding the edges of the thermoplastic films such that each thermoplastic film adheres to a respective different side of the ply. Park discloses that two thermoplastic films may be adhered together by applying heat and pressure to both films (see entire document including Figures 1 and 3 and column 4, lines 10-25). It would have been obvious to one having ordinary skill in the art at the time the invention was made to adhere the thermoplastic films by any suitable method, such as by applying heat and pressure to both films, as taught by Park, because it is within the general skill of a worker in the art to select a known method on the basis of its suitability.

Regarding claims 6 and 7, Gilbert discloses that similar materials may be used in the reinforcement fiber layer and the thermoplastic films (column 4, lines 13-53).

22. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,781,958 to Gilbert in view of USPN 4,988,236 to Ramsey in view of USPN 6,702,518 to Harris as applied to claims 1, 3, 8 and 10 above, and further in view of USPN 3,830,067 to Osborn.

Gilbert discloses that the thermoplastic films may be laid down by a number of processes (column 6, lines 9-27), but Gilbert does not specifically mention bonding the edges of the thermoplastic films such that the reinforcing material is capable of sliding inside the sheath

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formed by the thermoplastic films. Osborn discloses that edges of two thermoplastic films may be sealed by passing the edges between heated rollers or by using a suitable solvent that softens the edges to permit bonding (see entire document including column 5, lines 46-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to seal the edges by any suitable method, such as by passing the edges between heated rollers or by using a suitable solvent that softens the edges to permit bonding, as taught by Osborn, because it is within the general skill of a worker in the art to select a known method on the basis of its suitability.

Response to Arguments

23. Applicant's arguments filed 7/5/2006 have been fully considered but they are not persuasive.

The applicant asserts that Boyce fails to teach or suggest that the tape is flexible and may be wound around an outside surface of a structure to be reinforced, the tape conforming to a shape of the outside surface of the structure to be reinforced wherein the ply of yarns would reinforce the structure and remain flexible in response to the tape being wound around the structure. The examiner respectfully disagrees. Boyce repeatedly refers to the liner as flexible prior to heating the liner (column 2, lines 33-36, column 5, lines 18-20, and column 6, lines 52-54). In addition, Boyce specifically discloses that the tape may be used as an external pipe cover (column 3, lines 1-6 and column 6, lines 28-34), therefore, Boyce discloses that the tape is flexible and may be wound around an outside surface of a structure to be reinforced, the tape conforming to a shape of the outside surface of the structure to be reinforced wherein the ply of

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yarns would reinforce the structure and remain flexible in response to the tape being wound around the structure.

The applicant asserts that there would be no reason to wind the liner around a structure. The examiner respectfully disagrees. Boyce specifically discloses that the tape may be used as an external pipe cover (column 3, lines 1-6 and column 6, lines 28-34). In the event that it is shown that Boyce does not disclose winding the tape on the outside of a structure with sufficient specificity, it would have been obvious to one having ordinary skill in the art at the time the invention was made to wind the tape around a structure, as taught by Boyce, to provide the structure with a reinforcing cover.

The applicant asserts that Boyce fails to teach or suggest that the thermoplastic films avoid penetrating into the yarn layer. The examiner respectfully disagrees. Boyce discloses that the thermoplastic films avoid penetrating into the ply of yarns prior to heating (Figures 5 and 6).

The applicant asserts that the liner is not flexible after it is heated, applicant's argument is moot because prior to applying heat the structure is flexible and the structure possesses the other claimed limitations.

The applicant admits that Gilberts discloses that the tape can be placed adjacent structures, but the applicant asserts that there is no disclosure of the tape being wound around a structure to reinforce the structure. The examiner respectfully disagrees. Gilbert discloses that the tape may be wound on a roll (column 2, lines 60-65), therefore, Gilbert discloses that the tape is flexible and may be wound around an outside surface of a structure (roll) to be reinforced, the tape conforming to a shape of the outside surface of the structure to be reinforced wherein the

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ply of yarns would reinforce the structure and remain flexible in response to the tape being wound around the structure.

In response, the applicant asserts that the wrapping of such a tape around a roll does not teach the winding of the reinforcing tape of the present application around a structure to reinforce such structure while remaining flexible. The applicant fails to elaborate. The examiner respectfully disagrees for the reasons given in the preceding paragraph.

Conclusion

24. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

atp

g7g 8/17/06

ANDREW T. PIZIALI
PATENT EXAMINER